

**INDIANA DEPARTMENT OF TRANSPORTATION
OFFICE OF MATERIALS MANAGEMENT**

**PROCEDURE FOR ROADWAY FIELD EVALUATION AND APPROVAL LIST
REQUIREMENTS FOR DURABLE PREFORMED PAVEMENT MARKING TAPE
ITM No. 945-15P**

1.0 SCOPE.

- 1.1** This procedure covers the INDOT field evaluation for Durable Preformed Pavement Marking Tape.
- 1.2** This ITM may involve hazardous materials, operations, and equipment and may not address all of the safety problems associated with the use of the test method. The user of the ITM is responsible for establishing appropriate safety and health practices and determining the applicability of regulatory limitations prior to use.

2.0 REFERENCES.

2.1 ASTM Standards.

D 6628-01 Standard Specification for Color of Pavement Marking Tape.

2.2 Manual on Uniform Traffic Control Devices.

Part III - Markings

2.3 Federal Specification.

Federal Standard Color Chips 595a, No. 33538 for yellow.

- 3.0 TERMINOLOGY.** Definitions for terms and abbreviations shall be in accordance with the Department's Standard Specifications, Section 101

- 4.0 SIGNIFICANCE AND USE.** This ITM is used to test the durable preformed pavement marking tape on the Department outdoor road test site.

5.0 APPARATUS.

- 5.1** Retroreflectometer model LTL 2000, Hunter Lab MiniScan XE-Plus 45/0 Spectrophotometer. An annual calibration of the Retroreflectometer is required by the manufacturer

- 6.0 SAMPLING.** The manufacturer shall furnish a 300 ft (91.44 m) sample of the tape in a roll, in both white and yellow colors.

7.0 PREPARATION OF TEST SPECIMEN. For each color of the preformed tape, the material shall be field tested on both a concrete surface and a asphalt surface.

8.0 PROCEDURE.

8.1 The manufacturer of the material shall submit the Preliminary Product Evaluation Form (Appendix A) for each Durable Preformed Pavement Marking Tape that the manufacturer is requesting to be added to the listing.

8.2 The manufacturer of the material shall submit samples, specifications, and laboratory test reports to the Highway Operations Division, Evaluation Engineer. The samples of the material will be for evaluation on a roadway under actual conditions.

8.3 The color coordinates x and y and retroreflectivity readings will be taken prior to the placement and on the date of field reviews.

8.4 The material will be placed on both concrete and asphalt pavement surfaces. There shall be two white transverse stripes and two yellow transverse stripes. These transverse stripes will be placed at 1 ft (0.3048 m) spacings and alternating color. There shall also be five white longitudinal stripes; two stripes on the left and right lane edges, two stripes each on the right and left wheel path, and one stripe in the center lane. Following the white longitudinal stripes, five yellow longitudinal stripes will be placed in the roadway; two stripes on the left and right lane edges, two stripes each on the right and left wheel path, and one stripe in the center lane. The material will be placed by the manufacturer or his representative.

8.5 Field review of the material will be conducted after approximately 925,000, 1,850,000, 2,775,000 and 3,500,000 vehicles have traveled over the test area. On each field review, retroreflectivity and color readings will be taken. Retroreflectivity and color readings on the transverse lines will be taken at the left edge of the lane, left wheel path, center of lane, right wheel path and right edge of the lane. Retroreflectivity and color readings on the longitudinal lines will be taken at each end of the line. Visual observations of material adhesion to roadway will be made during the reviews. Visual observations of the color and retroreflectivity will be conducted at night.

9.0 CALCULATIONS.

9.1 The estimate for vehicles traveling across the test area on a daily basis will be calculated by dividing the ADT volume by 2 to determine the directional movement of vehicular volume. The directional movement of vehicular volume will then be multiplied by the appropriate percentage, based upon the lane configuration of the roadway, that is given under the heading of "Traffic in Most Heavily Traveled Lane (%)" of Exhibit 10-23 of Chapter 10 of the Highway

- 9.2 Capacity Manual 2000. The lane containing the evaluation material will be assumed to be the most heavily traveled lane.
 - 9.3 The average retroreflectivity reading for each color of the tape will be calculated.
 - 9.4 The average color chromaticity limits for both white and yellow tapes will be calculated.
- 10.0 REPORT.** The average data reading of the test results will be tabulated in the final report. Both colors (white and yellow) of a manufacturers specific type of durable tape will be approved if the following conditions are met:
- 10.1 The material is not difficult to install
 - 10.2 The average retroreflection of the white material does not fall below 150 mcd/m²/lx or the retroreflection of the yellow material does not fall below 100 mcd/m²/lx
 - 10.3 The color readings remain within the color specification limits during the entire evaluation period
 - 10.4 The tape does not maintain an acceptable level of durability
 - 10.5 The tape does not lose adhesion from the road surface and does not come up under the traffic flow
 - 10.6 Night time visual observation verifies that the retroreflectivity and the color appears to be the same both day and night
- 11.0 APPROVAL LIST.**
- 11.1 **Approval of Durable Preformed Pavement Marking Tape.** Durable preformed pavement marking tape in accordance with the Standard Specifications, Section 921.02(b) and the evaluation process of this ITM may be placed on the approval list.
 - 11.2 **Maintaining Approval.** Durable preformed pavement marking tape will be maintained on the Department approval list in accordance with ITM 806.
 - 11.3 **Removal from Approval List.** Durable preformed pavement marking tape will be removed from an approval list for, but not limited to, the following reasons:
 - 11.3.1 Changes in the materials or production process
 - 11.3.2 Performance of the preformed tape no longer meets the intended purpose.